National Institute of Environmental Health Sciences

Epidemiology of asthma mortality in Cuba and its relation to climate, 1989 to 2003

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Abstract:

Introduction Asthma affects some 300 million people worldwide and causes over 250,000 deaths each year. It is considered a global health problem due to associated high morbidity and mortality rates; disability in inadequately treated patients; years of potential life lost (YPLL); social costs; and impact on the lives of patients, their families and society. Environmental factors, including climatic conditions, are triggers. The 2004 Cuban National Survey on Asthma found a national prevalence of 13% (CI 9.3-16.8). Objective Describe the relationship between climatic factors andasthma mortality in Cuba from 1989 to 2003. Methods Data on deaths from asthma in Cuba were obtained frommedical death certificates. Crude and adjusted mortality rates werecalculated using the 1981 Cuban population as the standard population;the two-parameter exponential smoothing method was used fortrend and prediction analyses, with 95% confidence intervals (CI) forestimating mortality rates by age, sex and YPLL. ArcView softwareversion 3.3 was used to obtain, adjust, and represent models of meteorologicalvariables, and a bioclimatic atlas was included. Results Asthma mortality rates increased in Cuba in the early 90sand then decreased and stabilized in recent years; a rate of 2 per100,000 population was predicted for 2008. For the period understudy, 61% of asthma-related deaths occurred in Cuba's dry wintermonths (November-April). The meteorological variables related to riskof asthma mortality were: atmospheric pressure (997.7-1024.3 hPa),temperature (21.3-24.3oC), number of rainy days in the dry season(15.5-45.2 days), and cloudiness (2.99-5.51%). The provinces withthe highest risk of asthma mortality were: Havana City, Havana, Ciegode Avila, and Camaguey. Conclusions In Cuba, unfavorable weather conditions in some geographicareas can cause the death of asthmatic patients, althoughthese are not the only factors determining asthma mortality. Theasthma mortality rate is not alarmingly high and is expected to remainstable. Nevertheless, preventive measures must be maintained,particularly for women, who suffer excess mortality from the disease.Implementation of prevention strategies that take into considerationthe seasonal nature of asthma mortality is recommended.

Source: http://www.medicc.org/mediccreview/index.php?issue=3&id=19&a=vahtml
http://www.ncbi.nlm.nih.gov/pubmed/21487366

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Precipitation, Temperature

Geographic Feature: ☑

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Non-U.S. North America

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Asthma

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

Other Vulnerable Population: Women

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content